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ABSTRACT

The role of computer technology in China is examined in this paper, with a focus on the current status of school administration, educational technology, educational television, and computer education. A review of current research indicates that computer use in Chinese schools is sparse and haphazard. The recommendation is made that the USA/China Education Consortium investigate the formation of partnerships to facilitate the development of computer technology in Chinese schools. The increased utilization of technology in the Chinese educational system is predicted. (10 references) (LMI)

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COMPUTER TECHNOLOGY:

BRIDGING THE GAP

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COMPUTER TECHNOLOGY:

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BACKGROUND

The People's Republic of China has a territory of about 3.6 million square miles (9.6 million square kilometers) with a total population in excess of 1.1 billion. Approximately two hundred million people reside in cities and towns, while over 800 million live in rural areas.

The Chinese educational system is made up of preschool, secondary, higher, and adult education. Preschool education is provided in kindergarten units which admit children over 3 years of age. Primary schools enroll children at age 7, though the age of entry is gradually being changed to 6. Secondary school is divided into the junior and senior stages, each consisting of three years. Undergraduate programs in universities and colleges generally require 4 to 5 years of study, while some medical schools require 6 years of preparation. The graduate programs for master and doctoral degrees average 2 or 3 years for completion.

Education in The People's Republic of China is under the general guidance of the Communist party and administered by governments agencies at different levels. In May 1985, the Central Committee Resolution on the Reform in Educational System was approved. The resolution provides the guiding principle for

the development of China's education which specifies that education must serve the nation's socialist construction and the socialist construction must rely heavily on education (Swanson & Zhian, 1987). According to this axiom, the common mission of schools at all levels should be to aid the nation's modernization drive and competitively train students morally, intellectually, and physically for future development and service.

ADMINISTRATION

A fundamental feature of the Chinese education system is its adherence to a highly centralized, rational, top-down, administrative model. In the 1985 the central communist government upgraded the Ministry of Education and replaced it with the State Education Commission. The new Commission formulates the guiding principles of education, plans educational research, coordinates the functions of different education departments and agencies, and guides education reform (Swanson & Zhian, 1987).

The Central Education Administration Institute is responsible for training administrative leaders for the institutions of higher education and educational departments at provincial and municipal levels. The State Education Commission has also entrusted some teacher-training universities and colleges across the country with the task of conducting special classes to train school administrators. Administrators at

college levels and in primary and secondary schools are usually trained at provincial colleges of education (Frasher & Frasher, 1987).

EDUCATIONAL TECHNOLOGY

Educational technology is a new term in The People's Republic of China. The explanation of this term in the Chinese Education Encyclopedia is a translation of "electrified education". Educational technology has developed rapidly in China during the past decade (Zhang, 1986). Because of the severe shortage of teachers, instructional technology has become the answer to increasing the productivity of teachers -- to make competent instruction stretch as far as possible. High schools and language institutes have extensive and impressive language-lab equipment. Many courses are built around the videotapes of noted teachers and professors from distant schools. This technology has an impact on education in the urban schools as well as the rural schools.

In 1986, An English-Chinese Dictionary of Educational Technology was published in China. With some 30,000 entries, this bilingual dictionary is the first of its kind (Xing, 1986). Also in 1986, an official delegation of Chinese educators visited the AECT Convention in Las Vegas (Gubser, 1986). These examples illustrate that Chinese educators have been learning from other countries about educational technology due to the importance of

technology inside China.

EDUCATIONAL TELEVISION

Most of the teacher-training universities in China have television-production equipment to create instructional video tapes. The prevalent model of instructional television is similar to that which dominated the United States during the 1960's. The most impressive development of educational television in China is the Central Radio and Television University which is similar to the Open University in Great Britain. It is an expanded version of Beijing Television University established in 1960 which by 1983 had an enrollment of 935,000.

The Central Radio and Television University is administered by the State Education Commission and the Ministry of Radio, Motion Picture and Television, which provide leadership in both academics and technology. With branches in every province, autonomous region and municipality, the university's television structure is the largest of its kind in the entire world (Epstein, 1982).

The Central Radio and Television University's major courses of study include electronics, economics, machine building, mathematics, chemistry, physics, and English. Not surprisingly, many of the university students are factory workers, administrative staff and teachers who attended on either a full-

time or part-time basis. Official student status is achieved by graduating from middle school and passing a university entrance examination. Students are classified as full-time when they study four or more days a week. At every branch of the university there are full-time instructors involved with either teaching or management functions.

Finally, it should be noted that the university's television branches offer a graduation certificate, recognized by the province, after the successful completion of a 3-year program of study. Because the formal higher education institutions usually offer 4-year programs, the graduation certificate issued by the television university is a step between the secondary school diploma and four-year university diploma.

For almost thirty years, the television university has made major contributions by providing higher education to great numbers of Chinese. While the television university is certainly the primary source of educational programming, it is not the only source. Regular television stations also have educational programs including foreign languages, accounting, computer languages, and agriculture subjects (Jacobson, 1980).

It seems clear that Chinese educational television can provide a needed service, especially for workers and teachers who seek to improve their skills and expertise. Television instruction also releases the severity of unemployment problems in urban areas by providing part-time course work or remedial instruction. The Chinese government hopes that in addition to

removing unemployed youth from the streets, these courses will allow youth to engage in productive activity following training (Su, 1989).

COMPUTER EDUCATION

In the face of the challenge of the new technical revolution, the Chinese government has decided to concentrate significant resources on the development of computers, including expansion of the computer manufacture and information service industry.

Computers first appeared in China in the 1950's, but were largely ignored until recent years. Since the government adopted a more open foreign policy, the Chinese computer industry has been expanding rapidly, particularly in research, manufacture, application, training and education.

Computer education in middle schools is at the initial stage, but it is developing quickly. In 1978, students at Shanghai Children's Science Center were the first to receive basic training in computers. In 1980, a few microcomputers were presented to Beijing Jingshan Middle School by the Beijing Association of Science and Technology. The students began learning how to use the computers during their spare time rather than during school. In 1982, Beijing University and two other colleges helped a local middle school start introductory computer courses (Zhang, 1986).

At the initiative of the government and the Ministry of Radio, Motion Picture and Television, and with the support of various enterprises and individuals, additional schools started computer education programs. According to a survey in 1987, there were over 36,000 microcomputers being used in over 3,000 primary and secondary schools in China. Including the out-of-school computers available to some students, over 60,000 computers were used by students The majority of the computers were Apple II's.

In order to impart basic computer knowledge and practical application, the Number Two Secondary School affiliated with East China Normal University has carried out computer instruction since 1978. The content consists mainly of BASIC instruction and some software applications. The school has concentrated on training students to solve problems using computer technology.

The goal of computer education in middle schools is to provide students with basic computer concepts, fundamental knowledge of BASIC computer language and an understanding of the role computers play in modern society. Chinese educators attach great importance to the development of students' intelligence, logical thinking, and problem solving ability.

At present, computer courses are optional in most senior high schools. However, in some junior high schools, the students receive computer education as a component of their extra-curricular activities.

Computer education in primary schools started in 1984 in more than thirty large and medium-size cities. The training in computer science at the primary level, however, is undertaken mainly as part of extra-curricular activities.

As a developing country, China is not capable of investing heavily in computer education. The funds for computers in junior and primary schools come from government appropriations and donations from colleges, research institutions, enterprises, and individuals. Government research is currently being conducted on computer-assisted instruction, computer-managed instruction, and school management. However, China has difficulties in developing and adopting educational technology, particularly computers. The major problems are shortage of funds, shortage of qualified teachers and management personnel, and lack of computer experience (Lofstedt, 1984).

FINAL THOUGHTS

Both Chinese and American education are at a crossroads regarding the issue of using computer technology in schools. Of particular interst are the components of training programs for teachers and administrators which address the issue: What is the level of expertise needed by teachers and administrators who use computer technology in 1990's schools? The proposed question will be addressed in three parts: 1) What is the current status of computer use in China; 2) What is the desired level of use;

and, 3) How can the consortia be of assistance in accomplishing the desired goal? This discrepancy model provides the basis for the proposal.

A review of current research indicates that computer use in Chinese schools is spare and hapazard at best. However, the common mission of all Chinese schools is to aid the nation's modernization drive and to competitively train students intellectually, morally and physically for future development and service.

Educational technology is important to China and has developed rapidly during the past decade. Because of the severe shortage of teachers, instructional technology has become the answer to increasing the productivity of teachers -- to make competent instruction stretch as far as possible. High schools have extensive and impressive language laboratory equipment. In addition, most teacher-training universities in China have television production equipment to create instructional video tapes. The Central Radio and Television University, with branches in every province, autonomous region and, municipality the university has become the largest of its kind in the world. For almost thirty years, the television university has made major contributions by providing higher education to great numbers of Chinese.

But what of computer technology? In the face of technical challenge, the Chinese government has decided to concentrate

significant resources to the development of computers, including expansion of their computer manufacture and information service industry. Since the Chinese government adopted a more open foreign policy, the Chinese computer industry has been extending rapidly. According to a survey in 1987, there were over 36,000 microcomputers being used in over 3,000 primary and secondary schools in China. The majority of the computers were Apple II.

As a developing country, China is not capable of investing heavily in computer education. The funds for computers in the schools come from government appropriations and donations from business and individuals. In addition, the government is conducting research on computer-assisted instruction and computer-aided school management. China has experienced difficulities in developing and adopting computer technology due to shortage of funds, shortage of qualified teachers and mangement personnel, and lack of computer expertise.

It is unclear what long-term effect the recent events in China will have on the advancement of computer technology applications and utilization. What is clear is that the price of microcomputers is declining, while the Chinese government and people are more concerned than ever about computer technology. Consequently, the logical conclusion is for the USA/China Education Consortium to undertake a thorough and comprehensive study of the ways that partnerships can be established between institutions in the USA and institutions and school districts in China to facilitate the continued development of computer

technology in Chinese schools. The efforts could include visits to the USA by Chinese school officials to observe computer technology applications at work; demonstration of recent computer advances with school district in China; the opportunity for Chinese school administrator and/or teachers to study computer applications in the USA; the sharing of information relative to computer software; and other options as deemed appropriate by consortium members. The time and opportunity are right for sharing!

CONCLUSION

It is unclear what long-term effect the recent events in China will have on the advancement of educational technology applications and utilization. What is clear is that the price of microcomputers is declining, while the communist government and Chinese people are more concerned than ever about educational technology. Consequently, computer education and other forms of technology will likely expand rapidly from selected schools to schools in large cities and subsequently to schools in rural areas (Kwong, 1987). As universities and colleges produce additional highly qualified teachers, more staff development promoting utilization of educational technology will be provided for teachers at both the secondary and primary levels. The increased utilization of technology will occupy an increasingly important role in China's educational system as future

generations will undoubtedly depend heavily on the successful applications of educational technology.

BIBLIOGRAPHY

Epstein, I. (1982). Educational television in the People's Republic of China: Some preliminary observations, Comparative Education Review, 26 (2), 18-24.

Frasher, J. M. & Frasher R. S. (1987). Administrator preparation in the People's Republic of China. A paper presented at the annual meeting of the University Council on Educational Administration in Charlottesville, VA.

Gubser, L. (1986). China is hungry for educational technology, Tech Trends, 31 (2), 14-18.

Jacobson, H. W. (1980). The educational system and academic and technological exchanges of the People's Republic of China. A paper presented at the Conference on Communication and China's external relations in Honolulu, HI.

Lofstedt, J. I. (1984). Educational planning and administration in China. Comparative Education, 20 (1), 57-71.

Su, Z. (1989). People's education in the People's Republic of China, Phi Delta Kappan, 70 (8).

Swanson, A. D. & Zhian, Z. (1987). Education reform in China. Phi Delta Kappa, 68 (5), 373-378.

Xing, S. (1986). First Chinese-English dictionary on educational technology compiled, Tech Trends, 31 (2), 17.

Kwong, J. (1987). Organizational management in Chinese universities. Chinese Education, 29 (4), 3-117.

Zhang, C. (1986). Computer-based education in China. Educational Technology, 26 (7), 41-43.